Exam 1: Fall 2016

Do not open this exam until instructed to do so.

- You have 75 minutes to complete this exam
- You may use a calculator; you may **not** use any other device (cell phone, etc.)
- You may consult one page of notes (both sides); you may not use books, notebooks, etc.
- Show your work

I will not lie, cheat, or steal to gain an academic advantage, nor will I tolerate those who do.

Signature

Printed Name

True/False-Explain. Respond to the following statements by *explaing why they are true or false.* For each statement, a complete and correct explanation is worth 10 points. No partial credit will be awarded for stating TRUE or FALSE without explanation.

1. (10 pts.) Multinational firms, which make up less than one percent of US manufacturing firms, account for almost 75 percent of R&D spending. This fact suggests that multinational firms tend to have strong ownership advantages.

2. (10 pts.) Consider the model in which firms are heterogeneous in productivity. Firms in country one can serve two foreign countries by exporting or multinational production. The only difference between the two foreign countries is that one has a large GDP and one has a small GDP.

   The model predicts that the smallest country-one exporter to the large-GDP country will be more productive than the smallest country-one exporter to the small-GDP country. (By smallest exporter, we mean the exporter with the smallest sales to the foreign country.)

3. (10 pts.) A country is a good candidate for export platform FDI if it is close to the parent firm, close to other markets, and has low production costs.

4. (10 pts.) Deloitte Touche Tohmatsu Limited, a multinational management and tax consultancy, employs more than 240,000 professionals across the world. Deloitte's network of global offices, which provide on-site consulting to thousands of customers, is consistent with the proximity-concentration tradeoff.

5. Suppose the cost of operating a foreign affiliate is not only technological (costs associated with production) but also regulatory (costs imposed by the host-country government). These regulatory costs could be extra reporting burdens, permit/license fees, and having to recertify a company to operate abroad. In the model, let $f^p = f^T + f^R$ where f^T are the technological costs and f^R are the regulatory costs.

   One of the goals of the Transatlantic Trade and Investment Partnership (T-TIP) is to reduce the regulatory costs associated with foreign direct investment. In this question, we will use the two-country, heterogenous firm model to study the impact of T-TIP on US firms that serve the United Kingdom.

   Let $E_{uk} = 1000$, $\epsilon_{uk} = 4$, $w_{us} = 1.5$, $w_{uk} = 1.5$, $f^T = 3$, $f^R = 1$, $f^e = 1.25$, and $\tau = 0.2$.

   a. (5 pts.) What is the productivity level of the smallest US firm that exports to the UK? Call this level of productivity $\underline{\varphi}^e$.

   b. (8 pts.) What is the productivity level, $\underline{\varphi}^m$, for which a firm in the US is indifferent between exporting to the UK and operating a foreign affiliate in the UK?

c. (8 pts.) Suppose implementing T-TIP eliminates the regulatory costs of foreign production, $f^R = 0$, but everything else stays the same. What are the new values of $\underline{\varphi}^e$ and $\underline{\varphi}^m$?

d. (11 pts.) As a result of T-TIP, the influx of new investment into the UK has caused an increase in the demand for UK workers, driving up their wages, w_{uk}. Does the higher wage dampen or amplify the impact of T-TIP on FDI from the US into the UK? Explain your answer.

6. A firm in the United States would like to serve Germany and Hungary. It has narrowed down its choices to either operating a plant in Germany (a larger, higher-wage country) and using it to serve Germany and Hungary, or operating a plant in Hungary (a smaller, lower-wage country) and using it to serve Germany and Hungary. The US firm has productivity $\varphi = 2$, and the two economies can be described by $\epsilon_h = \epsilon_g = 3$, $f^p = 1.25$, $f^e = 0.75$, $\tau_{g,h} = 0.2$ $E_h = 100$, $E_g = 1000$, $w_h = 0.9$, $w_g = 1.0$.

   a. (4 pts.) Where will the US firm locate its plant? Show the calculations that support your answer.

   b. (8 pts.) Explain the economic intuition behind your choice of Germany or Hungary as an export platform.

7. Our model of horizontal FDI is characterized by the parameters w_1, w_2, E_1, E_2, ϵ_1, ϵ_2, f^p, f^e, and τ.

   a. (8 pts.) From the perspective of a firm in country one, which parameter(s) are *most important* for generating a desire for proximity to country two?

   b. (8 pts.) From the perspective of a firm in country one, which parameter(s) are *most important* for generating a desire concentrate production?

Extra Space

Clearly label the question number, and leave a reference to this page near the question.